SEQUENCE LISTING

<110> Gillies, Stephen
     Lo, Kin Ming

<120> Multiple Cytokine Protein Complexes

<130> LEX-010

<140>
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<150> 60/147,924
<151> 1999-08-09

<160> 32

<170> PatentIn Ver. 2.0

<210> 1
<211> 582
<212> DNA
<213> Mus musculus

<220>
<223> Description of Artificial Sequence: murine p35
     coding sequence for mature protein

<400> 1
agggtcattc cagtctctgg acctgccagg tgtcttagcc agtcccgaaa cctgctgaag 60
accacagatg acatggtgaa gacggccaga gaaaaactga acattattc ctgcactgct 120
gaagacatcg atcatgaaga catcacacgg gaccaaacca gcacattgaa gacctgttta 180
ccactggaac tacacaagaa cgagagttgc ctggctacta gagagacttc ttccacaaca 240
agagggagct gcctgccccc acagaagacg tctttgatga tgaccctgtg ccttggtagc 300
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aatcacaacc atcagcagat cattctagac aagggcatgc tggtggccat cgatgagctg 420
atgcagtctc tgaatcataa tggcgagact ctgcgccaga aacctcctgt gggagaagca 480
gacccttaca gagtgaaaat gaagctctgc atcctgcttc acgccttcag cacccgcgtc 540
gtgaccatca acagggtgat gggctatctg agctccgcct ga   582

<210> 2
<211> 1472
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: murine
     p40-IL-2 fusion protein coding sequence

<400> 2
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aggtggactg gactcccgat gcccctggag aaacagtgaa cctcacctgt gacacgcctg 180
aagaagatga catcacctgg acctcagacc agagacatgg agtcataggc tctggaaaga 240
ccctgaccat cactgtcaaa gagtttctag atgctggcca gtacacctgc cacaaaggag 300
gcgagactct gagccactca catctgctgc tccacaagaa ggaaaatgga atttggtcca 360
ctgaaatttt aaaaaatttc aaaaacaaga ctttcctgaa gtgtgaagca ccaaattact 420

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ccggacggtt cacgtgctca tggctggtgc aaagaaacat ggacttgaag ttcaacatca 480
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cagagaaggt cacactggac caaagggact atgagaagta ttcagtgtcc tgccaggagg 600
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tgcggcatgt tctggatttg actcaaagca aaagctttca attggaagat gctgagaatt 1320
tcatcagcaa tatcagagta actgttgtaa aactaaaggg ctctgacaac acatttgagt 1380
gccaattcga tgatgagtca gcaactgtgg tggactttct gaggagatgg atagccttct 1440
gtcaaagcat catctcaaca agccctcaat aa                                1472
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<210> 3
<211> 1409
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: murine
      p40-GM-CSF fusion protein coding sequence

<400> 3
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atgtgtcctc agaagctaac atgtgtcctc agaagctaac catctcctgg tttgccatcg 60
ttttgctggt gtctccactc atggccatgt gggagctgga aaagacgtt tatgttgtag 120
aggtggactg gactcccgat gccctggag aaacagtgaa cctcacctgt gacacgcctg 180
aagaagatga catcacctgg acctcagacc agagacatgg agtcataggc tctggaaaga 240
ccctgaccat cactgtcaaa gagtttctag atgctggcca gtacacctgc acaaaggag 300
gcgagactct gagccactca catctgctgc tccacaagaa ggaaaatgga atttggtcca 360
ctgaaatttt aaaaaatttc aaaaacaaga ctttcctgaa gtgtgaagca ccaaattact 420
ccggacggtt cacgtgctca tggctggtgc aaagaaacat ggacttgaag ttcaacatca 480
agagcagtag cagttcccct gactctcggg cagtgacatg tggaatggcg tctctgtctg 540
cagagaaggt cacactggac caaagggact atgagaagta ttcagtgtcc tgccaggagg 600
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tgacagccag ctactaccag acatactgcc ccccaactcc ggaaacggac tgtgaaacac 1320
aagttaccac ctatgcggat ttcatagaca gccttaaaac ctttctgact gatatcccct 1380
ttgaatgcaa aaaaccaagc caaaaatga                                    1409
```

<210> 4
<211> 1389
<212> DNA

2

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: human
     p40-IL-2 fusion protein coding sequence

<400> 4
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gtggccatat gggaactgaa gaaagatgtt tatgtcgtag aattggattg gtatccggat 120
gcccctggag aaatggtggt cctcacctgt gacacccctg aagaagatgg tatcacctgg 180
accttggacc agagcagtga ggtcttaggc tctggcaaaa ccctgaccat ccaagtcaaa 240
gagtttggag atgctggcca gtacacctgt cacaaaggag gcgaggttct aagccattcg 300
ctcctgctgc ttcacaaaaa ggaagatgga atttggtcca ctgatatttt aaaggaccag 360
aaagaaccca aaataagac ctttctaaga tgcgaggcca agaattattc tggacgtttc 420
acctgctggt ggctgacgac aatcagtact gatttgacat tcagtgtcaa aagcagcaga 480
ggctcttctg accccaagg ggtgacgtgc ggagctgcta cactctctgc agagagagtc 540
agagggaca acaaggagta tgagtactca gtggagtgcc aggaggacag tgcctgccca 600
gctgctgagg agagtctgcc cattgaggtc atggtggatg ccgttcacaa gctcaagtat 660
gaaaactaca ccagcagctt cttcatcagg gacatcatca acctgacccc acccaagaac 720
ttgcagctga gccattaaa gaattctcgg caggtggagg tcagctggga gtaccctgac 780
acctggagta ctccacattc ctacttctcc ctgacattct gcgttcaggt ccagggcaag 840
agcaagagag aaaagaaaga tagagtcttc acggacaaga cctcagccac ggtcatctgc 900
cgcaaaaatg ccagcattag cgtgcgggcc caggaccgct actatagctc atcttggagc 960
gaatgggcat ctgtgccctg cagtgcacct acttcaagtt ctacaaagaa aacacagcta 1020
caactggagc atttactgct ggatttacag atgattttga atggaattaa taattacaag 1080
aatcccaaac tcaccaggat gctcacattt aagttttaca tgcccaagaa ggccacagaa 1140
ctgaaacatc ttcagtgtct agaagaagaa ctcaaacctc tggaggaagt gctaaattta 1200
gctcaaagca aaaactttca cttaagaccc agggacttaa tcagcaatat caacgtaata 1260
gttctggaac taaagggatc tgaaacaaca ttcatgtgtg aatatgctga tgagacagca 1320
accattgtag aatttctgaa cagatggatt acctttgtc aaagcatcat ctcaacacta 1380
acttgataa   1389

<210> 5
<211> 1278
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: murine
     Fc-p35 fusion protein coding sequence

<400> 5
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ttgggtggac catccgtctt catcttccct ccaaagatca aggatgtact catgatctcc 120
ctgagcccca tagtcacatg tgtggtggtg gatgtgagcg aggatgaccc agatgtccag 180
atcagctggt ttgtgaacaa cgtggaagta cacacagctc agacacaaac ccatagagag 240
gattacaaca gtactctccg ggtggtcagt gccctcccca tccagcacca ggactggatg 300
agtggcaagg agttcaaatg caaggtcaac aacaaagacc tcccagcgcc catcgagaga 360
accatctcaa aacccaaagg gtcagtaaga gctccacagg tatatgtctt gcctccacca 420
gaagaagaga tgactaagaa acaggtcact ctgacctgca tggtcacaga cttcatgcct 480
gaagacattt acgtggagtg gaccaacaac gggaaaacag agctaaacta caagaacact 540
gaaccagtcc tggactctga tggttcttac ttcatgtaca gcaagctgag agtggaaaag 600
aagaactggg tggaaagaaa tagctactcc tgttcagtgg tccacgaggg tctgcacaat 660
caccacacga ctaagagctt ctcccggacc ccgggtaggg tcattccagt ctctggacct 720
gccaggtgtc ttagccagtc ccgaaacctg ctgaagacca cagatgacat ggtgaagacg 780
gccagagaaa aactgaaaca ttattcctgc actgctgaag acatcgatca tgaagacatc 840
acacgggacc aaaccagcac attgaagacc tgtttaccac tggaactaca caagaacgag 900

3

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agttgcctgg ctactagaga gacttcttcc acaacaagag ggagctgcct gcccccacag 960
aagacgtctt tgatgatgac cctgtgcctt ggtagcatct atgaggactt gaagatgtac 1020
cagacagagt tccaggccat caacgcagca cttcagaatc acaaccatca gcagatcatt 1080
ctagacaagg gcatgctggt ggccatcgat gagctgatgc agtctctgaa tcataatggc 1140
gagactctgc gccagaaacc tcctgtggga gaagcagacc cttacagagt gaaaatgaag 1200
ctctgcatcc tgcttcacgc cttcagcacc cgcgtcgtga ccatcaacag ggtgatgggc 1260
tatctgagct ccgcctga                                             1278
```

<210> 6
<211> 1287
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: human Fc-p35
      fusion protein coding sequence

<400> 6

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gagcccaaat cttgtgacaa aactcacaca tgcccaccgt gcccagcacc tgaactcctg 60
gggggaccgt cagtcttcct cttcccccca aaacccaagg acaccctcat gatctcccgg 120
acccctgagg tcacatgcgt ggtggtggac gtgagccacg aagaccctga ggtcaagttc 180
aactggtacg tggacggcgt ggaggtgcat aatgccaaga caaagccgcg ggaggagcag 240
tacaacagca cgtaccgtgt ggtcagcgtc ctcaccgtcc tgcaccagga ctggctgaat 300
ggcaaggagt acaagtgcaa ggtctccaac aaagccctcc cagcccccat cgagaaaacc 360
atctccaaag ccaaagggca gccccgagaa ccacaggtgt acaccctgcc cccatcacgg 420
gaggagatga ccaagaacca ggtcagcctg acctgcctgg tcaaaggctt ctatcccagc 480
gacatcgccg tggagtggga gagcaatggg cagccggaga caactacaa gaccacgcct 540
cccgtgctgg actccgacgg ctccttcttc ctctatagca agctcaccgt ggacaagagc 600
aggtggcagc aggggaacgt cttctcatgc tccgtgatgc atgaggctct gcacaaccac 660
tacacgcaga gagcctctc cctgtccccg ggaagaaacc tccccgtggc cactccagac 720
ccaggaatgt tcccatgcct tcaccactcc caaaacctgc tgagggccgt cagcaacatg 780
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gaagatatca caaaagataa aaccagcaca gtggaggcct gtttaccatt ggaattaacc 900
aagaatgaga gttgcctaaa ttccagagag acctctttca taactaatgg gagttgcctg 960
gcctccagaa agacctcttt tatgatggcc ctgtgcctta gtagtattta tgaagacttg 1020
aagatgtacc aggtggagtt caagaccatg aatgcaaagc ttctgatgga tcctaagagg 1080
cagatctttc tagatcaaaa catgctggca gttattgatg agctgatgca ggccctgaat 1140
ttcaacagtg agactgtgcc acaaaaatcc tcccttgaag aaccggattt ttataaaact 1200
aaaatcaagc tctgcatact tcttcatgct ttcagaattc gggcagtgac tattgacaga 1260
gtgacgagct atctgaatgc ttcctaa                                   1287
```

<210> 7
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: forward primer
      for construction of murine p40-IL-2 fusion
      protein

<220>
<221> misc_feature
<222> (12)..(14)
<223> translation initiation codon

<400> 7

4
```

aagctagcac catgtgtcct cagaagctaa cc                                    32

<210> 8
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: reverse primer
      for construction of murine p40-IL-2 fusion
      protein

<220>
<221> misc_feature
<222> Complement((7)..(9))
<223> translation stop codon

<400> 8
ctcgagctag gatcggaccc tgcaggg                                          27

<210> 9
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: DNA sequence
      at the junction of murine p40-IL-2 fusion protein

<220>
<221> misc_feature
<222> (14)..(16)
<223> encodes the C-terminal amino acid residue of
      murine p40

<220>
<221> misc_feature
<222> (26)..(28)
<223> encodes the N-terminal amino acid residue of
      mature murine IL-2

<400> 9
ctgcagggtc cgatccccgg gtaaagcacc c                                     31

<210> 10
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: DNA sequence
      at the junction of single-chain murine IL12 and
      GMCSF

<220>
<221> misc_feature
<222> (14)..(16)

<223> encodes the C-terminal amino acid residue of
      murine p40

<220>
<221> misc_feature
<222> (26)..(28)
<223> encodes the N-terminal amino acid residue of
      mature murine GMCSF

<400> 10
ctgcagggtc cgatccccgg gaaaaagca                                          28

<210> 11
<211> 2013
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: murine
      p35-linker-p40-IL-2 fusion protein coding sequence

<400> 11
agggtcattc cagtctctgg acctgccagg tgtcttagcc agtcccgaaa cctgctgaag 60
accacagatg acatggtgaa gacggccaga gaaaaactga aacattattc ctgcactgct 120
gaagacatcg atcatgaaga catcacacgg gaccaaacca gcacattgaa gacctgttta 180
ccactggaac tacacaagaa cgagagttgc ctggctacta gagagacttc ttccacaaca 240
agagggagct gcctgccccc acagaagacg tctttgatga tgaccctgtg ccttggtagc 300
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gcagagaagg tcacactgga ccaaagggac tatgagaagt attcagtgtc ctgccaggag 1140
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cagcagaata aatatgagaa ctacagcacc agcttcttca tcagggacat catcaaacca 1260
gacccgccca agaacttgca gatgaagcct ttgaagaact cacaggtgga ggtcagctgg 1320
gagtaccctg actcctggag cactccccat tcctacttct ccctcaagtt ctttgttcga 1380
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cagcagcagc agcagcagca gcacctggag cagctgttga tggacctaca ggagctcctg 1680
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ttgcccaagc aggccacaga attgaaagat cttcagtgcc tagaagatga acttggacct 1800
ctgcggcatg ttctggattt gactcaaagc aaaagctttc aattggaaga tgctgagaat 1860
ttcatcagca atatcagagt aactgttgta aaactaaagg ctctgacaa cacatttgag 1920
tgccaattcg atgatgagtc agcaactgtg gtggactttc tgaggagatg gatagccttc 1980
tgtcaaagca tcatctcaac aagccctcaa taa                                    2013

6

<210> 12
<211> 1569
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: murine
      p35-linker-p40 fusion protein coding sequence

<400> 12
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agggtcattc cagtctctgg acctgccagg tgtcttagcc agtcccgaaa cctgctgaag 60
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gaagacatcg atcatgaaga catcacacgg gaccaaacca gcacattgaa gacctgttta 180
ccactggaac tacacaagaa cgagagttgc ctggctacta gagagacttc ttccacaaca 240
agagggagct gcctgccccc acagaagacg tctttgatga tgaccctgtg ccttggtagc 300
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aatcacaacc atcagcagat cattctagac aagggcatgc tggtggccat cgatgagctg 420
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gtgaccatca acagggtgat gggctatctg agctccgcgt cgagcggggg cagcggggggc 600
ggaggcagcg gcggggggcgg atccgccatg tgggtgctgg agaaagacgt ttatgttgta 660
gaggtggact ggactcccga tgcccctgga gaaacagtga acctcacctg tgacacgcct 720
gaagaagatg acatcacctg gacctcagac cagagacatg gagtcatagg ctctggaaag 780
accctgacca tcactgtcaa agagtttcta gatgctggcc agtacacctg ccacaaagga 840
ggcgagactc tgagccactc acatctgctg ctccacaaga aggaaaatgg aatttggtcc 900
actgaaattt taaaaaattt caaaaacaag actttcctga agtgtgaagc accaaattac 960
tccggacggt tcacgtgctc atggctggtg caaagaaaca tggacttgaa gttcaacatc 1020
aagagcagta gcagttcccc tgactctcgg gcagtgacat gtggaatggc gtctctgtct 1080
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gatgtcacct gcccaactgc cgaggagacc ctgcccattg aactggcgtt ggaagcacgg 1200
cagcagaata aatatgagaa ctacagcacc agcttcttca tcagggacat catcaaacca 1260
gacccgccca agaacttgca gatgaagcct ttgaagaact cacaggtgga ggtcagctgg 1320
gagtaccctg actcctggag cactccccat tcctacttct ccctcaagtt ctttgttcga 1380
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ttcctcgtag agaagacatc taccgaagtc caatgcaaag gcgggaatgt ctgcgtgcaa 1500
gctcaggatc gctattacaa ttcctcatgc agcaagtggg catgtgttcc ctgcagggtc 1560
cgatcctag   1569
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<210> 13
<211> 2709
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: murine
      Fc-p35-linker-p40-IL-2 fusion protein coding
      sequence

<400> 13
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gagcccagag ggcccacaat caagccctgt cctccatgca aatgcccagc acctaacctc 60
ttgggtggac catccgtctt catcttccct ccaaagatca aggatgtact catgatctcc 120
ctgagcccca tagtcacatg tgtggtggtg gatgtgagcg aggatgaccc agatgtccag 180
atcagctggt ttgtgaacaa cgtggaagta cacacagctc agacacaaac ccatagagag 240
gattacaaca gtactctccg ggtggtcagt gccctcccca tccagcacca ggactggatg 300
agtggcaagg agttcaaatg caaggtcaac aacaaagacc tcccagcgcc catcgagaga 360
accatctcaa aacccaaagg gtcagtaaga gctccacagg tatatgtctt gcctccacca 420
gaagaagaga tgactaagaa acaggtcact ctgacctgca tggtcacaga cttcatgcct 480
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gaagacattt acgtggagtg gaccaacaac gggaaaacag agctaaacta caagaacact 540
gaaccagtcc tggactctga tggttcttac ttcatgtaca gcaagctgag agtggaaaag 600
aagaactggg tggaaagaaa tagctactcc tgttcagtgg tccacgaggg tctgcacaat 660
caccacacga ctaagagctt ctcccggacc ccgggtaggg tcattccagt ctctggacct 720
gccaggtgtc ttagccagtc ccgaaacctg ctgaagacca cagatgacat ggtgaagacg 780
gccagagaaa aactgaaaca ttattcctgc actgctgaag acatcgatca tgaagacatc 840
acacgggacc aaaccagcac attgaagacc tgtttaccac tggaactaca caagaacgag 900
agttgcctgg ctactagaga gacttcttcc acaacaagag ggagctgcct gcccccacag 960
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gccatgtggg tgctggagaa agacgtttat gttgtagagg tggactggac tcccgatgcc 1380
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gaagtccaat gcaaaggcgg gaatgtctgc gtgcaagctc aggatcgcta ttacaattcc 2220
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gttgtaaaac taaagggctc tgacaacaca tttgagtgcc aattcgatga tgagtcagca 2640
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<210> 14
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: forward primer
     for PCR amplification of murine p35 subunit of
     IL-12

<220>
<221> misc_feature
<222> (16)..(18)
<223> translation initiation codon

<400> 14
aagcttgcta gcagcatgtg tcaatcacgc tac   33

8

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<210> 15
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: reverse primer
      for PCR amplification of murine p35 subunit of
      IL-12

<220>
<221> misc_feature
<222> Complement((10)..(12))
<223> translation stop codon

<400> 15
ctcgagcttt caggcggagc tcagatagcc                                        30


<210> 16
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: coding
      sequence at the junction between p35 and p40 that
      comprise the murine single-chain IL-12

<220>
<221> misc_feature
<222> (8)..(10)
<223> encodes the C-terminal amino acid residue of
      murine p35

<220>
<221> misc_feature
<222> (59)..(61)
<223> encodes the N-terminal amino acid residue of
      mature murine p40

<400> 16
gagctccgcg tcgagcgggg gcagcggggg cggaggcagc ggcgggggcg gatccgccat 60
g                                                                       61


<210> 17
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Protein
      sequence at the junction between p35 and p40 that
      comprise the murine single-chain IL-12

<400> 17
Ser Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ala
 1               5                  10                  15
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<210> 18
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: coding
      sequence at the junction between murine p40 and
      the mature N-terminus of KS heavy chain

<220>
<221> misc_feature
<222> (14)..(16)
<223> encodes the C-terminal amino acid residue of
      murine p40

<220>
<221> misc_feature
<222> (71)..(73)
<223> encodes the N-terminal residue of mature KS heavy
      chain

<400> 18
ctgcagggtc cgatccccgg gatccggagg ttcaggggggc ggaggtagcg gcggaggggg 60
ctccttaagc cag   73

<210> 19
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: protein
      sequence at the junction between murine p40 and
      the mature N-terminus of KS heavy chain

<400> 19
Pro Gly Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 1   5   10   15

Leu Ser

<210> 20
<211> 64
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: coding
      sequence at the junction between murine p35 and
      the KS light chain

<220>

<221> misc_feature
<222> (8)..(10)
<223> encodes the C-terminal amino acid residue of
      murine p35

<220>
<221> misc_feature
<222> (62)..(64)
<223> encodes the N-terminal amino acid residue of the
      light chain

<400> 20
gagctccgcg tcgagcgggg gcagcggggg cggaggcagc ggcggggggcg gatccttaag 60
cgag   64

<210> 21
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: protein
      sequence at the junction between murine p35 and
      the KS light chain

<400> 21
Ser Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu
 1   5   10   15

Ser

<210> 22
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: forward primer
      for the PCR amplification of murine IL-4

<220>
<221> misc_feature
<222> (9)..(11)
<223> translation initiation codon

<400> 22
tctagaccat gggtctcaac ccccagc   27

<210> 23
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: reverse primer

for the PCR amplification of murine IL-4

<220>
<221> misc_feature
<222> Complement((8)..(10))
<223> encodes the C-terminal amino acid residue of
      murine IL-4

<400> 23
cggatcccga gtaatccatt tgcatgatgc tctttaggct ttccagg   47

<210> 24
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: coding
      sequence at the junction of murine IL-4 and the
      mature KS-1/4 light chain

<220>
<221> misc_feature
<222> (1)..(3)
<223> encodes the C-terminal serine residue of murine
      IL-4

<220>
<221> misc_feature
<222> (55)..(57)
<223> encodes the N-terminal amino acid residue of the
      mature KS-1/4 light chain

<400> 24
tcgggatccg gaggttcagg gggcggaggt agcggcggag ggggctcctt aagcgag   57

<210> 25
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: protein
      sequence at the junction of murine IL-4 and the
      mature KS-1/4 light chain

<400> 25
Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
  1   5   10   15

Leu Ser Glu

<210> 26
<211> 27
<212> DNA

12

<210> Artificial Sequence

<220>
<223> Description of Artificial Sequence: forward primer
     for the PCR amplification of murine IL-4

<220>
<221> misc_feature
<222> (9)..(11)
<223> translation initiation codon

<400> 26
tctagaccat gggtctcaac ccccagc   27

<210> 27
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: reverse
     primer for the PCR amplification of murine IL-4

<220>
<221> misc_feature
<222> Complement((13)..(15))
<223> encodes the C-terminal amino acid residue of
     murine IL-4

<400> 27
cgatatcccg gacgagtaat ccatttgcat gatgctcttt aggctttcca gg   52

<210> 28
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: coding
     sequence at the junction between murine IL-4 and
     murine GM-CSF

<220>
<221> misc_feature
<222> (1)..(12)
<223> encodes the C-terminal sequence of muIL4

<220>
<221> misc_feature
<222> (28)..(39)
<223> encodes the N-terminal sequence of muGM-CSF

<400> 28
atggattact cgtccgggat gggaaaagca cccgcccgc   39

<210> 29
<211> 32

13

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: forward primer
     for the PCR amplification of murine lymphotactin

<220>
<221> misc_feature
<222> (13)..(15)
<223> translation initiation codon

<400> 29
tctagagcca ccatgagact tctcctcctg ac   32

<210> 30
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: reverse primer
     for the PCR amplification of murine lymphotactin

<220>
<221> misc_feature
<222> Complement((7)..(9))
<223> encodes the C-terminal amino acid residue of
     murine lymphotactin

<400> 30
ggatccccca gtcagggtta ctgctg   26

<210> 31
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: coding
     sequence at the junction between murine
     lymphotactin and KS-IL2 heavy chain

<220>
<221> misc_feature
<222> (1)..(3)
<223> encodes the C-terminal amino acid residue of
     murine lymphotactin

<220>
<221> misc_feature
<222> (55)..(57)
<223> encodes the N-terminal amino acid residue of the
     KS-IL2 heavy chain

<400> 31
cccggatccg gaggttcagg gggcggaggt agcggcggag ggggctcctt aagccag   57

14

<210> 32
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: protein
sequence at the junction between murine
lymphotactin and KS-IL2 heavy chain

<400> 32
Gly Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu
 1   5   10   15

Ser